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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,237	11/13/2003	Hormuzd M. Khosravi	5038-335	1182

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EXAMINER	
BENGZON, GREG C	
ART UNIT	PAPER NUMBER
2444	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/713,237	KHOSRAVI ET AL.	
	Examiner	Art Unit	
	GREG BENGZON	2444	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9,10,15,19 and 22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9,10,15,19 and 22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This application has been examined. Claims 9-10, 15, 19, 22 are pending. Claims 1-8, 11-14, 16-18, 20-21, 23-24 are cancelled.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/03/2009 has been entered.

Priority

The effective date of the claims described in this application is November 13, 2003.

Response to Arguments

Applicant's arguments filed 04/03/2009 have been fully considered but they are not persuasive.

The Applicant presents the following argument(s) [*in italics*]:

… Although Everdell has a wealth of information on network management and resources for a control plane, Everdell does not teach portions of functionality of a control plane protocol…the MCD, SRM, LRM, and the like recited by the Examiner appear to not be part of a control plane protocol or functionality of such a protocol.

The Examiner respectfully disagrees with the Applicant.

The Examiner notes that the SRM and LRM deal with fault detection and recovery procedures, including reconfiguring and failover processing which indicate *functionality of a control plane protocol.*

Everdell Paragraph 589 disclosed detecting hardware errors while Paragraph 763 disclosed wherein the master SRM also sends a notice to the slave SRM on the cross-connection card (e.g., 562-562b, 564a-564b, 566a-566b, 568a-565b, FIG. 35) to re-configure the connections between the port cards (e.g., 554a-554h, 556a-556h, 558a-558h, 560a-560h, FIG. 35) and the redundant forwarding card. The slave SRM on the switch fabric control card re-configures the registers in the scheduler component to disable the scheduler's links to the EPP chip on the forwarding card that's being removed from the network device. As a result, when the forwarding card is removed, the scheduler will not detect an error due to a missing EPP chip.

Regarding the claim amendments, the Examiner interprets the limitation wherein *the functionality implemented on the other cards is presented to the functionality implemented on the card as a process running on the card* as implemention of a messaging interface or API for communication between the line cards.

Everdell-Crump disclosed (re. Claim 15) *implementing a portion of the control plane protocol module that is separated from the core functionality* (Crump-Figure 8,Column 4 Lines 55-65, ' *The control plane is split into box management control functions and routing control functions*.', Column 6 Lines 55-65) *wherein the functionality implemented on the other cards is presented to the functionality implemented on the card as a process running on the card.* (Everdell-Paragraph 109, Paragraph 125, 'API', Paragraph 470,*'library of compiled code'*)

Specification

Claims 15,19,22 are objected to because of the following informalities:

Claims 22 recite *an article of computer-readable media*.

While the inventor may define specific terms used to describe invention, the inventor must do so “with reasonable clarity, deliberateness, and precision” and, if done, must “set out the inventor's uncommon definition in some manner within the patent disclosure' so as to give one of ordinary skill in the art notice of the change” in meaning. Any special meaning assigned to a term “must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of the invention.

The claim or claims must conform to the invention as set forth in the remainder of the specification and *the terms and phrases used in the claims must find clear support or antecedent basis in the description* so that the meaning of the terms in the claims may be ascertainable by reference to the description.

Claims 15,19,22 recite a limitation wherein ‘ *the functionality implemented on the other cards is presented to the functionality implemented on the card as a process running on the card.’*

The Applicant has indicated Pages 9-10 and Figs.4 and 5 as providing support for said limitation.

While the inventor may define specific terms used to describe invention, the inventor must do so “with reasonable clarity, deliberateness, and precision” and, if done, must “set out the inventor's uncommon definition in some manner within the patent disclosure' so as to give one of ordinary skill in the art notice of the change” in meaning. Any special meaning assigned to a term “must be sufficiently clear in the specification

that any departure from common usage would be so understood by a person of experience in the field of the invention.

The claim or claims must conform to the invention as set forth in the remainder of the specification and *the terms and phrases used in the claims must find clear support or antecedent basis in the description* so that the meaning of the terms in the claims may be ascertainable by reference to the description.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 9,10,15,19,22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Everdell (US Publication 2002/0165961) further in view of Crump (US Patent 6999454).

As stated by the Applicant the first portion of functionality can be the forwarding plane update functionality (rarely distributed). A second portion can be the link specific

functions (good candidate for distribution). A second portion can also include the protocol-specific functions given on Applicant Specifications page 9. Link specific functions, protocol-specific functions are described as distinct from forwarding plane update functions.

The Examiner interprets the limitation wherein *the functionality implemented on the other cards is presented to the functionality implemented on the card as a process running on the card* as implemention of a messaging interface or API for communication between the line cards.

Everdell disclosed (re. Claim 15) a system, comprising: a control plane having *a controller control plane protocol module* (Everdell-Paragraph 166,*'master control driver MCD',*Paragraph 577,*'Master SRM'*) to implement a core functionality of a control plane protocol module (Everdell-Paragraph 8,' *each distributed processor within the network device',* Paragraph 10,Paragraph 145*'*)

at least one forwarding plane (Everdell-Paragraph 153) having *a worker control plane protocol module* (Everdell-Paragraph 577,'*local resiliency managers LRM*')

a backplane to provide connectivity between the control plane and the forwarding plane; (Everdell-Paragraph 146,' *client out-of-band management channel* ') and

an infrastructure module resident on the control plane and the forwarding plane constructed and arranged to manage the connectivity between the control plane and the forwarding plane. (Everdell-Paragraph 10,Paragraph 145)

Everdell disclosed (re. Claim 15) the system further comprising a communication library resident on the control plane and the forwarding plane (Everdell-Paragraph 109, Paragraph 125, 'API', Paragraph 470,*'library of compiled code'*) to communicate with the infrastructure module to obtain information about control plane protocol modules and to setup connections with the control plane protocol modules (Everdell-Paragraph 122) *wherein the functionality implemented on the other cards is presented to the functionality implemented on the card as a process running on the card.* (Everdell-Paragraph 109, Paragraph 125, 'API', Paragraph 470,*'library of compiled code'*)

Everdell-Crump disclosed (re. Claim 15) the control plane further comprising a controller control plane protocol module. (Everdell-Paragraph 166,*'master control driver MCD',*Paragraph 577,*'Master SRM'*)

Everdell disclosed a network device having a distributed architecture may include an internal out-of-band control plane. Each of the distributed processors is connected

to the out-of-band control plane, and the processors use the out-of-band control plane to transmit control information.

However Everdell did not disclose (re. Claim 15) *implementing a portion of the control plane protocol module that is separated from the core functionality.*

Crump disclosed (re. Claim 15) *implementing a portion of the control plane protocol module that is separated from the core functionality* (Crump-Figure 8,Column 4 Lines 55-65, ' *The control plane is split into box management control functions and routing control functions*.', Column 6 Lines 55-65)

Everdell and Crump are analogous art because they present concepts and practices regarding the separation of network management control functions. At the time of the invention it would have been obvious to a person of ordinary skill in the networking art to combine Crump into Everdell. The motivation for said combination would have been to improve router scalability with respect to the control plane. (Crump-Column 6 Lines 35-40)

Everdell-Crump disclosed (re. Claim 15) *implementing a portion of the control plane protocol module that is separated from the core functionality* (Crump-Figure 8,Column 4 Lines 55-65, ' *The control plane is split into box management control*

functions and routing control functions.', Column 6 Lines 55-65) *wherein the functionality implemented on the other cards is presented to the functionality implemented on the card as a process running on the card.* (Everdell-Paragraph 109, Paragraph 125, 'API', Paragraph 470,*'library of compiled code'*)

Everdell-Crump disclosed (re. Claim 15) the forwarding plane further comprises a worker control plane protocol module. (Everdell-Paragraph 577,'*local resiliency managers LRM*')

Everdell-Crump disclosed (re. Claim 7) the infrastructure further comprising at least one standardized application programming interface. (Everdell-Paragraph 109)

Everdell-Crump disclosed (re. Claim 8) the application programming interface further comprising an application programming interface in accordance with the Network Processing Forum. (Everdell-Paragraph 109, Paragraph 125, 'API')

Everdell-Crump disclosed (re. Claim 9) the infrastructure module further comprising a namespace to allow registration of components of the infrastructure module. (Everdell-Paragraph 110,Paragraph 146)

Everdell-Crump disclosed (re. Claim 10) the infrastructure module further comprising a control plane protocol module registration module and a packet redirection module. (Everdell-Paragraph 110,Paragraph 112,Paragraph 146)

Everdell-Crump disclosed (re. Claim 11) the infrastructure module further comprising a binding and discovery module (Everdell-Paragraph 483) and a transport module to allow the infrastructure module to communicate with other infrastructure modules on other network devices. (Everdell-Paragraph 10,Paragraph 145)

Everdell-Crump disclosed (re. Claim 12) the communication library further comprising a peer control plane protocol module application programming interface. (Everdell-Paragraph 557,*' separation of the data plane (device drivers) and control plane applications) results in the device drivers being peers of the applications.*')

Everdell-Crump disclosed (re. Claim 13) the communication library further comprises a messaging layer. (Everdell-Paragraph 109)

Everdell-Crump disclosed (re. Claim 14) the communication library further comprising a transport abstraction layer to handle interconnection and transport protocols. (Everdell-Paragraph 161)

Everdell-Crump disclosed (re. Claim 19) a method of distributing processing in a network device, comprising: defining controller and worker control plane protocol modules (Everdell-Paragraph 8,' *each distributed processor within the network device'*) *wherein the controller control plane protocol module implements a core functionality of a control plane protocol module on a control plane, and wherein the worker control plane protocol module implements a portion of the control plane protocol module that is separated from the core functionality on at least one forwarding plane;* (Crump-Figure 8,Column 4 Lines 55-65, ' *The control plane is split into box management control functions and routing control functions*.', Column 6 Lines 55-65)

developing corresponding entries in a communications library; (Everdell-Paragraph 109, Paragraph 125, 'API', Paragraph 470,*'library of compiled code'*) implementing an infrastructure module, the communication library and the controller module on a control plane; (Everdell-Paragraph 6) and implementing the infrastructure module, the communication library and the worker modules on a forwarding plane.

(Everdell-Paragraph 153)

Everdell-Crump disclosed (re. Claim 20) defining a controller and worker control plane protocol modules further comprising providing interfaces between the controller and worker modules. (Everdell-Paragraph 109, Paragraph 125, 'API')

Everdell-Crump disclosed (re. Claim 21) developing corresponding entries in a communications library further comprising developing instructions that, when executed, cause the controller and worker control plane protocol modules to communicate. (Everdell-Paragraph 146,' *client out-of-band management channel* ')

Claims 22 (article of computer readable media) are rejected on the same basis as Claims 15, 19 .

Conclusion

Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Bengzon whose telephone number is (571) 272-3944. The examiner can normally be reached on Mon. thru Fri. 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on (571)272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. B./

Examiner, Art Unit 2444

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2444